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10/666,069	09/19/2003	Neil Gilmartin	030206 (BLL-0109)	7662

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08/04/2008

EXAMINER

RECEK, JASON D

ART UNIT	PAPER NUMBER
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2142

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/666,069	Applicant(s) GILMARTIN, NEIL	
	Examiner JASON RECEK	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to the Pre-Brief Appeal Conference decision mailed on May 21st 2008.

Status of Claims

Claims 1-23 are pending.

Claims 1-23 are currently rejected under 35 U.S.C. 103(a).

Claim 1 is objected to.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph.

Response to Arguments

1. Applicant's arguments, filed 5/15/08 with respect to the rejection(s) of claim 1 under Dobbins and IEEE 802 have been fully considered and are persuasive.

Specifically Dobbins was not cited and does not explicitly disclose "determining a list of shortest paths with capacity" as recited by claim 1. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the applied art and Gonda.

2. Applicant's arguments with respect to the rejection(s) of claim(s) 2-3 under 103(a) have been fully considered and are persuasive. Specifically, Avargues does not

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disclose “selecting a longest length path” as recited by claim 2. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the applied art and Hsu US 6,363,319 B1.

3. Applicant’s arguments with respect to the rejection(s) of claim(s) 4-7 under 103(a) have been fully considered and are persuasive. Specifically, it is not inherent that a path not having capacity would be deleted. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the applied art and Westfall et al. US 6,976,087 B1.

4. Applicant’s arguments, pg. 4-5, that certain claim rejections were flawed as a matter of law is persuasive. Specifically, a reference was not included in the 103 rejections that should have been, this typo has been corrected. The rejections now list all references relied upon.

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not provide clear antecedent basis for the term “computer-readable medium” as recited by claim 23.

Claim Objections

2. Claim 1 is objected to because of the following informalities: the letter "n" is not a word. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 recites the limitation "said new access port" in line eighteen. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 2-18 depend from a rejected claim, therefore they are also rejected.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 16-17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins U.S. Pat. No. 5,684,800 in view of IEEE Standard 802.1q and in further view of Gonda US 2003/0067928 A1.

Regarding claim 1, Dobbins (800) discloses “receiving a VLAN name, [...] and two or more access ports” as a VLAN/Access Port table (see column 3, lines 4-5). Dobbins (800) also discloses “determining switches and trunks associated with said access ports” as a switched network and a protocol for discovering switches (see column 2, line 59 and column 4, lines 41-43). Dobbins (800) also discloses “searching a VLAN database for said VLAN” as a directory that contains VLAN-IDs and is capable of returning a list of IDs (see column 7, lines 7-11). Dobbins (800) further discloses “creating a VLAN if said searching does not result in locating said VLAN, wherein said creating includes: selecting a starting access port from said two or more access ports; mapping a base path from said starting access port to another of said access ports, wherein said base path includes one or more of said switches and one or more of said trunks” as a call processor that allows a system to update its mappings when a source-destination pair is not found in the connection database (see column 5, lines 6-27 and fig. 5). Dobbins (800) also discloses “adding said base path to said VLAN including said starting access port and said another of said access ports” as a system that generally discovers and assigns VLANs by mapping end user systems and storing these in a database (see column 6, lines 3-12). Dobbins (800) discloses “mapping a new path from said access port to one of said switches in said VLAN” as a process where a

switch determines the path of switches and links to traverse and explicitly maps a connection for the source-destination (see column 4, lines 37-38). Dobbins (800) also discloses “adding said new path to said VLAN including said access port; and transmitting said VLAN to said VLAN database” as a system that updates a VLAN table (see columns 2-3, lines 65-5), “adding said new access port to an existing VLAN” as mapping access ports to VLAN-IDs (col. 3 ln. 3-4), and “adding said new access port to the existing VLAN, if there is at least one physical path” as a discovery agent that maps ports (col. 4 ln. 37-40), the agent will not be able to map if there is not at least one physical path.

Dobbins (800) does not disclose “determining a list of shortest paths with capacity for said new access port” however this is taught by Gonda as using the shortest path first protocol (paragraph 36) and that paths have bandwidth requirements (paragraph 53). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dobbins by using the SPF protocol taught by Gonda. This protocol is well known in the art and yields predictable results.

Dobbins (800) does not disclose “receiving [...] a class of service” however this is taught by the IEEE standard 802.1q as a priority indicator (Definitions 3.12-3.13, Section 6.5). It would have been obvious to one of ordinary skill in the art to modify Dobbins (800) with the priority field taught by the IEEE standard 802.1q. The motivation is to comply with international standards.

Regarding claim 16, Dobbins (800) further discloses “receiving a hub switch and wherein each said one or more access ports are mapped to said hub switch” as a switched network where VLANs are established, such switches having access ports connected to end systems (see column 2, lines 59-62). The term “hub switch” is interpreted as ‘ethernet switch’ to avoid confusion arising from the fact that a hub and a switch are different devices, thus “hub switch” is disclosed by Dobbins’ teaching of a ‘switch’.

Regarding claim 17, the invention of Dobbins would necessarily include “wherein said trunks associated with said access ports include a relative cost value” due to the way a switched network operates. When the network is being discovered the link state packets sent out will include ‘costs’ to each neighbor in the network, thus each line or trunk will include a relative cost value.

Regarding claim 19, Dobbins also discloses “a system for facilitating the design and assignment of Ethernet VLANs, the system comprising: a network of switches and connecting trunks” (see figs. 1,5) “a storage device in communication with said network, wherein said storage device includes a VLAN database” (see fig. 3, item 82) “a user system in communication with said network” (see fig. 5, items 20A-20L) “and a host system in communication with said network, wherein said host system contains a computer readable storage medium ... comprising: [the method of claim 1]” the host

system is shown as a host agent (fig. 3, item 85) and software is also shown (fig. 3, items 87-89, also see column 4, lines 66-67).

Regarding claim 20, Dobbins (800) discloses “wherein said network is the Internet” as a system of networks and LANs that are globally connected to the Internet (see column 1, line 32).

Regarding claim 21, Dobbins (800) discloses “wherein said network is an intranet” as a switched network (see fig. 5).

Regarding claim 22, Dobbins (800) discloses “wherein said VLAN database is a relational database” as a connection database that has tables (see fig. 3, item 82, and figs. 6-7, and column 7, lines 1-30).

Regarding claim 23, Dobbins (800) discloses “a computer-readable medium having computer-executable instructions for facilitating design and assignment of Ethernet VLANs, ... comprising [the method of claim 1]” because the system and method of Dobbins (800) is designed to be run on a computer system which necessarily consists of computer readable media and a processor (see column 4, lines 21-23).

3. Claims 2-3 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of IEEE 802.1q and Gonda and further in view of Avargues et al. U.S. Pat. No. 6,104,701 and Hsu US 6,363,319 B1.

Dobbins (800), Gonda and IEEE 802.1q do not disclose “selecting a pre-selected number of said two or more access ports” however Avargues discloses this as a necessary step when determining a least cost routing path between end users, the users being equivalent to access ports (see abstract) and discloses “creating a list of least cost paths from said starting access port to each of said selected access ports, wherein each said path includes one or more of said switches and one or more of said trunks” as broadcasting a query to determine paths to end node and monitoring answers to check for the best match (see column 4, lines 8-15).

Avargues does not explicitly disclose “selecting a longest length path from said list for said base path” however this is taught by Hsu as selecting the longer length path (col. 11 ln. 36-47).

It would have been obvious to one of ordinary skill in the art to modify the call processor of Dobbins (800) that maps paths to use the path selection process described in Avargues and Hsu. The motivation to combine is simply to provide the best match when adding a link that is not already in the network or VLAN.

Regarding claim 3, the further limitation “wherein said pre-selected number is four” is in practice repeating the function of claim 2. Claim 2 discloses selecting at least

2 ports, in order to map a path *between* something you must have a beginning and an end. By choosing 4 locations, or ports, claim 3 is performing two iterations of the method described by claim 2, therefore claim 3 is rejected.

Regarding claim 14-15, Dobbins (800) does not disclose using least cost paths, however Avargues teaches “wherein said [base/new] path is a least cost path” as a system for determining the best path by using a least cost path (see abstract). Least cost paths are well known in the art (as evidenced by Avargues and “Computer Networking, A Top-Down Approach Featuring the Internet”, 2001) and it would have been obvious to one of ordinary skill in the art to modify Dobbins (800) with the least cost path taught by Avargues. Avargues suggests doing so for the purpose of minimizing communication costs (col. 3 ln. 20-25).

4. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800), IEEE 802.1q, Gonda, Avargues and Hsu as applied to claims 2-3 above, and further in view of Westfall et al. US 6,976,087 B1.

Regarding claim 4, Dobbins does not disclose “wherein each said two or more access ports includes a corresponding bandwidth requirement and said mapping a base path further includes: determining if each said least cost path in said list has capacity for said bandwidth requirement corresponding to said another of said access ports;” however Gonda discloses this as a system for establishing Ethernet circuits, where

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circuits have a bandwidth requirement attribute and ports may be mapped similar to a VLAN (see paragraphs 53 and 62). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the bandwidth requirement of Gonda with the inventions of Dobbins and Avargues. Motivation is establishing a minimal level of service.

Dobbins (800), IEEE 802.1q, Gonda, Avargues and Hsu do not explicitly disclose “deleting a least cost path from said list in response to said least cost path not having capacity” however this is taught by Westfall as removing a path when it falls below the minimum bandwidth requirement (col. 16 ln. 8-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dobbins, Avargues and Gonda by removing paths that do not meet the minimum bandwidth requirement as taught by Westfall for the purpose of efficiency. It would be a waste of resources to consider paths that are incapable of providing the required service.

Regarding claim 5, by disclosing a bandwidth requirement Gonda's invention also necessitates the need for path bandwidth capacity information to be provided from some sort of management system, thus “determining includes receiving capacity data from an operational support system” would have been inherent in Gonda's invention.

Regarding claims 6-7, they correspond to claims 4-5, therefore they are rejected under similar rationale.

5. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800), IEEE 802.1q and Gonda in view of Dobbins U.S. Pat. No. 5,825,772.

Regarding claim 8, Dobbins (800) does not disclose “creating a list of one or more least cost paths from said access port to one of said switches located in said VLAN” however Dobbins (772) teaches this as connection mapping using a path determination algorithm (see column 13, lines 50-51). Dobbins (772) also discloses “selecting the shortest length path from said list for said new path, wherein if there is more than one shortest length path then selecting the one resulting in a lowest total hub value for the VLAN for said new path” as selecting a shortest path based on summation of link cost (see column 13, lines 52-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dobbins (800) with the shortest path selection algorithm from Dobbins (772). The motivation to combine is to choose efficient paths between access ports.

Regarding claim 9, Dobbins (800) and Dobbins (772) do not disclose “wherein each said two or more access ports includes a corresponding bandwidth requirement and said mapping a new path further includes: determining if each said least cost path in said list has capacity for said bandwidth requirement corresponding to said access port;” however Gonda discloses this as a system for establishing Ethernet circuits,

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where circuits have a bandwidth requirement attribute and ports may be mapped similar to a VLAN (see paragraphs 53 and 62). Also the limitation “deleting a least cost path from said list in response to said least cost path not having capacity” would inherently be present in a system that required a path to meet a bandwidth requirement, if capacity was not present, the path would not be selected.

Regarding claim 10, the same reasoning used in the rejection of claim 5 is applied since claim 10 adds the same limitation as claim 5. The motivation to modify Dobbins (800) with Gonda has already been presented and the same motivation applies to the instant claims, see rejection of claims 4-5.

Regarding claim 11, Dobbins (772) also discloses “calculating a total bandwidth transport required by said list of least cost paths, wherein said total bandwidth transport required is said total hub value” as choosing a path based upon metrics, such as link cost (see column 13, lines 52-54). Link costs may include many factors, one of which is bandwidth, thus choosing based on hub value, which is calculated using bandwidth is another way of choosing a path based on link cost.

Regarding claims 12-13, they correspond to claims 9-10, therefore they are rejected for similar reasons.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800), IEEE 802.1q and Gonda as applied to claim 1 above, and further in view of Zabihi et al. US2004/0042454 A1.

Dobbins (800) discloses a “VLAN database includes a VLAN name field, [...] VLAN switch fields and VLAN access port fields for each said VLAN” as a table which matches VLAN-IDs with access ports and is kept by a specific switch, or as a directory that maps VLANs to switches and ultimately end systems (see column 7, lines 7-15 and figs. 6-7). Dobbins (800) does not disclose a database containing “VLAN trunk fields” however Zabihi teaches this as a network management database in a VLAN environment that associates trunk links with VLANs (see Fig. 3 and paragraph 63 in the detailed description).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the switch tables from Dobbins (800) with the more complete database taught by Zabihi. The motivation is to reduce overhead associated with developing and maintaining VLANs. A more comprehensive database will save a technician time by not having to manually select trunk lines.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Luo et al. US 6,377,551 B1 discloses a method for finding optimum paths given a set of constraints (abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON RECEK whose telephone number is (571)270-1975. The examiner can normally be reached on Mon - Thurs 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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